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**United States Patent** [19][11] **Patent Number:** **6,018,954****Assaf**[45] **Date of Patent:** **Feb. 1, 2000****[54] HEAT PUMP SYSTEM AND METHOD FOR AIR-CONDITIONING**[76] **Inventor:** Gad Assaf, 5 Kosover St., Rehovot 76408, Israel[21] **Appl. No.:** 08/973,090[22] **PCT Filed:** Apr. 9, 1996[86] **PCT No.:** PCT/US96/04935

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[51] **Int. Cl.<sup>7</sup>** ..... F25D 17/06[52] **U.S. Cl.** ..... 62/94; 62/332; 62/271; 62/305; 62/310[58] **Field of Search** ..... 62/91, 92, 93, 62/94, 332, 335, 271, 305, 310**[56] References Cited****U.S. PATENT DOCUMENTS**

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There is provided a heat pump system including two (4, 6), at least similar units in fluid communication with each other, each unit having a housing (8, 8'), a first air/brine heat exchanger (12, 12'), a second brine/refrigerant heat exchanger (24, 24'), a brine inlet (10, 10') for applying brine onto at least one of the heat exchangers, a brine reservoir (14, 14') and a pump (28) for circulating the brine from the reservoir to the inlet. The first and second heat exchangers are in closed loop fluid communication with each other and have a compressor (44) for circulating a refrigerant there-through in selected directions.

**28 Claims, 3 Drawing Sheets**